

1 What is claimed is:

2

3 1. A hinge for positioning a left panel and a right panel, the
4 hinge comprising,

5 an inflatable bladder for encapsulating an inflation
6 material,

7 a top film extending between the left and right panels and
8 encapsulating a curing resin, and

9 a bottom film extending between the left and right panels,
10 the top film and bottom film are circumferentially disposed
11 about the bladder, the top film having a top circumferential
12 length, the bottom film having a bottom circumferential length,
13 the top and bottom circumferential lengths for angularly
14 positioning the left and right panels.

15

16 2. The hinge of claim 1 further comprising,

17 a flex circuit extending from the left panel and around the
18 bladder for electrically routing power from the left panel.

19

20

21 3. The hinge of claim 1 wherein,

22 the inflation material is a sublimation powder disposed in
23 the bladder for inflating the bladder.

24

25

26 4. The hinge of claim 1 further comprising,

27 a reflective coating disposed on the bladder for reflective
28 UV light into the curing resin.

1 5. The hinge of claim 1 further comprising,

2 a left frame for securing the left panel to the top film and
3 to the bottom film and to the bladder, and

4 a right frame for securing the right panel to the top film
5 and to the bottom film and to the bladder.

6
7 6. The hinge of claim 1 further comprising,

8 a left frame for supporting the left panel to the top film
9 and to the bottom film and to the bladder,

10 a left adhesive layer for securing the left frame to the
11 left panel and to the top film and to the bottom film and to
12 the bladder,

13 a right frame for supporting the right panel to the top film
14 and to the bottom film and to the bladder, and

15 a right adhesive layer for securing the right frame to the
16 right panel and to the top film and to the bottom film and to
17 the bladder.

18
19 7. The hinge of claim 1 further comprising,

20 a flex circuit extending from the left panel and around the
21 bladder for electrically routing power from the left panel,

22 a plurality of ground pads disposed on the top and bottom
23 films,

24 a plurality of extensions comprising conductive traces
25 extending from the flex circuit to the plurality of ground
26 pads, respectively, for distributively grounding the hinge.

27
28 ///

1 8. The hinge of claim 1 further comprising,

2 a flex circuit extending from the left panel and around the
3 bladder for electrically routing power from the left panel,

4 a plurality of ground pads disposed on the top and bottom
5 films and disposed on and under the left and right panels, and

6 a plurality of extensions comprising conductive traces
7 extending from the flex circuit to the plurality of ground
8 pads, respectively, for grounding the hinge.

9
10 9. The hinge of claim 1 further comprising,

11 a flex circuit extending from the left panel and around the
12 bladder for electrically routing power from the left panel, the
13 left panel being a solar cell panel comprising a silver contact
14 and a thin film solar cell, the flex circuit comprising a
15 conductor trace connected the silver contact for routing power
16 from the left panel and around the bladder.

17
18 10. The hinge of claim 1 wherein the curing resin is cured by
19 exposure to UV light, the hinge further comprising,

20 a coating disposed over the top and bottom films for passing
21 UV light and for conducting static electrical charge.

22
23
24 11. The hinge of claim 1 wherein the curing resin is cured by
25 exposure to UV light, the hinge further comprising,

26 a transparent coating disposed over the hinge for passing UV
27 light and for conducting static electrical charge, the coating
28 comprising indium tin oxide and magnesium fluoride.

1 12. The hinge of claim 1 further comprising,

2 a flex circuit extending from the left panel and around the
3 bladder and comprising a trace conductor for electrically
4 routing power from the left panel having a electrical contact
5 and around the bladder, and

6 a wrap around contact for electrically connecting the
7 electrical contact and the trace conductor.
8
9
10

11 13. A hinge for positioning a left panel and a right panel, the
12 hinge comprising,

13 a top film for encapsulating a curing resin, the curing
14 resin cured by exposure to UV light, the top film having a top
15 circumferential length for defining the position between the
16 left and right panels, and

17 a coating disposed over the top film for passing the UV
18 light for curing the curing resin and for static discharge
19 protection of the film.
20
21

22 14. The hinge of claim 13, the hinge further comprising,

23 a bottom film, the top film and bottom films are
24 circumferentially disposed about the bladder, the bottom film
25 having a bottom circumferential length, the top and bottom
26 circumferential length defining the position between the left
27 and right panels,
28

1 15. The hinge of claim 13, wherein,
2 the coating comprises indium tin oxide and magnesium
3 fluoride.
4
5 16. A hinge for positioning a left panel and a right panel, the
6 hinge comprising,
7 a curing resin,
8 a top film coupled to the left and right panels and for
9 encapsulating the curing resin, the curing resin being cured by
10 exposure to UV light, the top film having a top circumferential
11 length for defining the angular position between the left and
12 right panels.
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28 ///